

REMARKS

The Examiner is thanked for the thorough review and consideration of the present application. The non-final Office Action dated February 27, 2004 has been received and its contents carefully reviewed.

By this Response, Applicants have amended the specification and claims 18-20, 30 and 33-34. Claims 31 and 32 have been cancelled without prejudice or disclaimer of the subject matter recited therein. Applicants have also amended FIGs. 1-7 to remove “related” from the legend and add “prior”, as indicated in red in the annotated sheets showing changes. Claims 18-20, 30 and 33-34 are currently pending. No new matter has been added. Reconsideration and withdrawal of the objections and rejections in view of the above amendments and the following remarks are respectfully requested.

In the Office Action, FIGs. 1-7 have been objected to. Applicants have amended FIGs. 1-7 as indicated in the attached annotated sheets showing changes, and submit corresponding replacement sheets to reflect the changes made. Accordingly, the objection is overcome.

In the Office Action, claims 18, 31, 32 and 34 are objected to because of informalities. Applicants have amended the claims to comply with proper claim form, and cancelled claims 31 and 32 without prejudice or disclaimer. Accordingly, the objections are overcome.

In the Office Action, claims 18-20, 31 and 32 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,266,118, issued to Lee et al. (hereafter “Lee”). Claims 31 and 32 have been cancelled without prejudice of the subject matter recited therein. Thus, the rejection, as applied to cancelled claims 31 and 32, is rendered moot. Applicants respectfully traverse the rejection because Lee fails to teach each and every feature recited in the claims of the present application.

Claim 18 is allowable over Lee because Lee fails to teach or suggest an array substrate for an IPS-LCD device that includes at least:

“a plurality of common electrodes extending perpendicular to the common line, the plurality of common electrodes being divided into first and second portions of respective first and second domains; a plurality of pixel electrodes arranged alternately with the plurality of common electrodes, the plurality of pixel electrodes being divided into first and second portions of the respective first and second domains; an auxiliary common

electrode perpendicularly contacting each of the common electrodes,” as recited in independent claim 18 of the present application.

Because Lee fails to teach or suggest at least these features of claim 18, Lee does not anticipate claim 18. Accordingly, claim 18 is allowable over Lee.

Claim 19 is allowable over Lee because Lee fails to teach or suggest an array substrate for an IPS-LCD device that includes at least:

“a common line parallel to the gate line, the common line including first and second auxiliary common lines perpendicular to the common line; a plurality of common electrodes extending perpendicular to the first and second auxiliary common lines, the plurality of common electrodes being divided into first and second portions of respective first and second domains; a plurality of pixel electrodes arranged alternately with the plurality of common electrodes, the plurality of pixel electrodes being divided into first and second portions of the respective first and second domains,” as recited in independent claim 19 of the present application.

Because Lee fails to teach or suggest at least these features of claim 19, Lee does not anticipate claim 19. Accordingly, claim 19 is allowable over Lee.

Claim 20 is allowable over Lee because Lee fails to teach or suggest an array substrate for an IPS-LCD device that includes at least “a plurality of auxiliary electrodes connecting the plurality of common and pixel electrodes to form a multi-domain having a check pattern,” as recited in independent claim 20. Because Lee fails to teach or suggest at least this feature of independent claim 20, Lee does not anticipate claim 20. Accordingly, claim 20 is allowable over Lee.

Reconsideration and withdrawal of the rejection of claims 18-20, 31 and 32 are requested.

In the Office Action, claims 33 and 34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of U.S. Patent No. 5,977,562, issued to Hirakata et al. (hereafter “Hirakata”). Applicants respectfully traverse the rejection because neither Lee nor Hirakata teaches or suggests the combined features recited in the claims of the present application. For example, Lee and Hirakata fail to teach or suggest an array substrate for an IPS-LCD device that includes, among other features, “a plurality of pixel electrodes on the first passivation layer; the

plurality of pixel electrodes being divided into first and second portions of respective first and second domains” as recited in claims 33 and 34 of the present application.

The Office Action concedes that “Lee does not disclose a first passivation layer over the gate insulating layer, the data line and thin film transistor; a plurality of pixel electrodes on the first passivation layer; a second passivation layer over the pixel electrodes; a common line on the second passivation layer.” To compensate for the deficiencies of Lee, the Office Action relies upon the teachings of Hirakata. However, Applicants respectfully note, Hirakata discloses a gate insulating film 203, a first dielectric film 204, a second dielectric film 205 and pixel electrode 321 formed on the second dielectric film 205. As such, Hirakata fails to teach or suggest “a plurality of pixel electrodes on the first passivation layer, the plurality of pixel electrodes being divided into first and second portions of respective first and second domains,” as recited in independent claims 33 and 34 of the present application.

Because Hirakata fails to teach or suggest at least this feature of claims 33 and 34, Hirakata fails to remedy the deficient teachings of Lee. Accordingly, no combination of Lee and Hirakata would provide an array substrate having the combined features recited in claims 33 and 34 of the present application. Thus, claims 33 and 34 are allowable over Lee and Hirakata. Reconsideration and withdrawal of the rejection of claims 33 and 34 are respectfully requested.

In the Office Action , claim 30 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of U.S. Patent No. 6,154,266, issued to Okamoto et al. (hereafter “Okamoto”). Applicants respectfully traverse the rejection because neither Lee nor Okamoto, analyzed alone or in combination, teaches or suggests the combined features recited in the claims of the present application. For example, Lee and Okamoto fail to teach or suggest an array substrate for an IPS-LCD device that includes, among other features, “an alignment layer having first and second rubbing directions, the first and second rubbing directions corresponding to the first and second domains, respectively, wherein the first and second rubbing directions are symmetrical with respect to a line parallel to the gate line,” as recited in independent claim 30.

Applicants respectfully note the rubbing treatment in Okamoto involves first and second steps i.e., “the rubbing treatment is performed twice so that the rubbing treatment direction set by the first rubbing treatment and the rubbing treatment direction set by the second rubbing treatment are opposite to each other by 180 degrees” (col. 6, lines 36-40). As such, Okamoto fails to teach or suggest an alignment layer having first and second rubbing directions, “the first

and second rubbing directions corresponding to the first and second domains, respectively, wherein the first and second rubbing directions are symmetrical with respect to a line parallel to the gate line," as recited in claim 30. As such, Okamoto fails to remedy the deficient teachings of Lee, and claim 30 is allowable over Lee and Okamoto. Reconsideration and withdrawal of the rejection of claim 30 are requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If the Examiner deems that a telephone conversation would further the prosecution of this application, the Examiner is invited to call the undersigned at (202) 496-7500.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Dated: May 27, 2004

Respectfully submitted,

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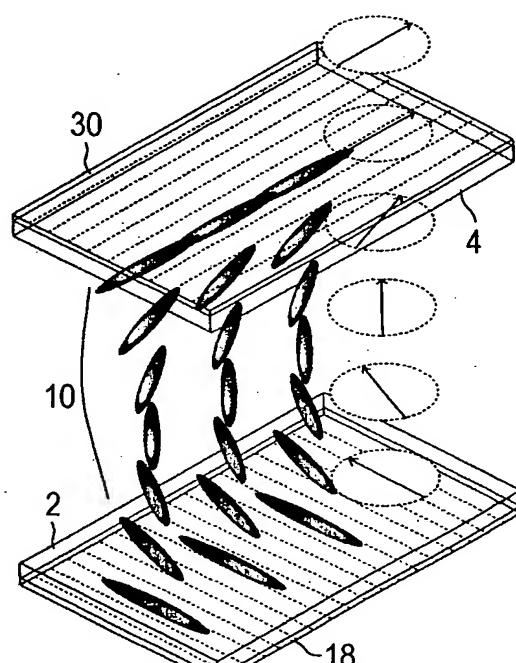
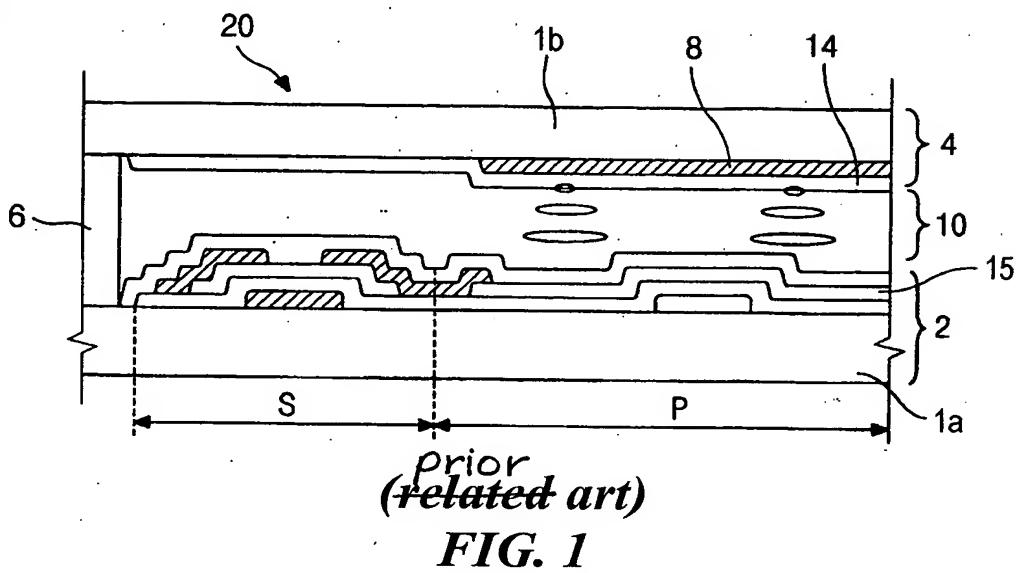
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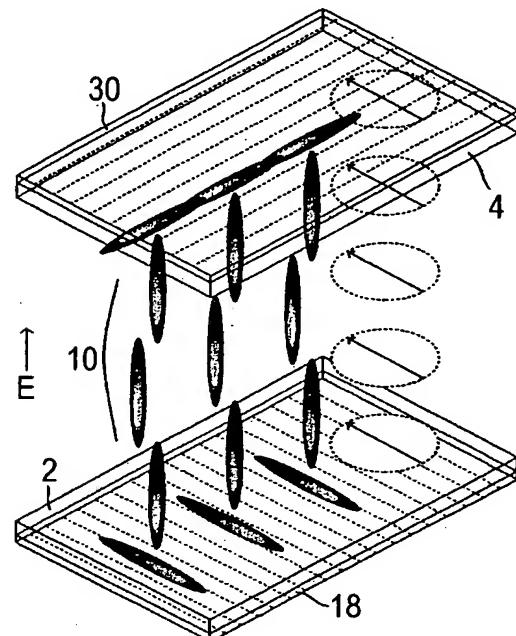


App No.: 10/620,575
Inventor: Jang-Jin Yoo et al.

Docket No.: 8733.418.10-US

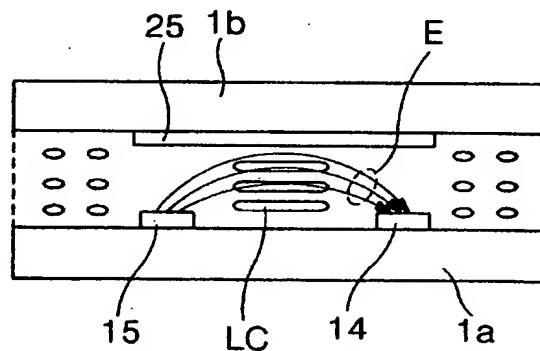
Title: IN-PLANE SWITCHING LCD PANEL
Annotated Sheet 1 of 5





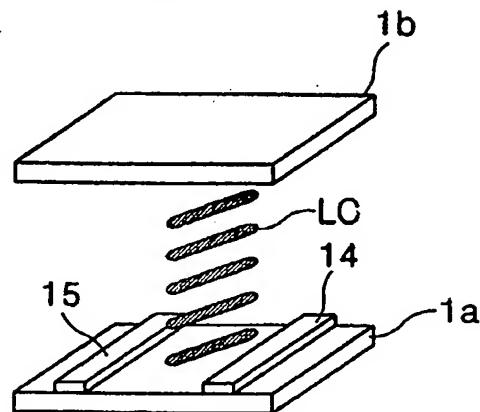
*(prior
related art)*

FIG. 2B



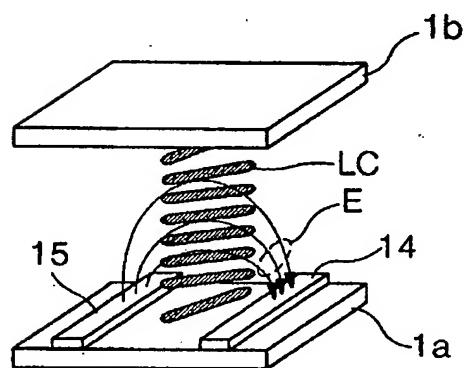
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FIG. 3



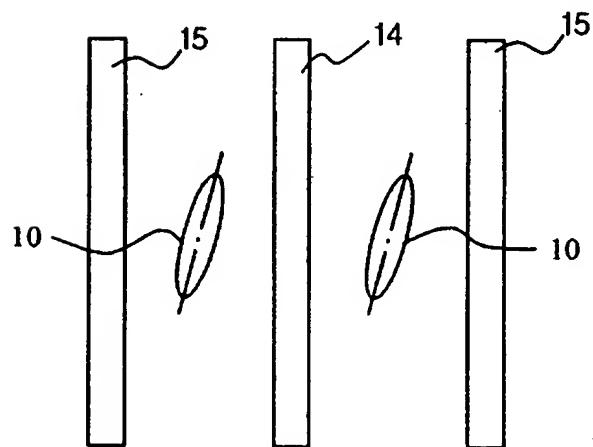
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FIG 4A



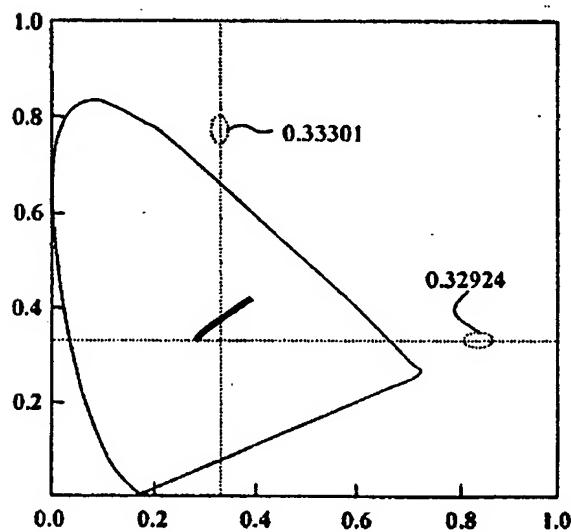
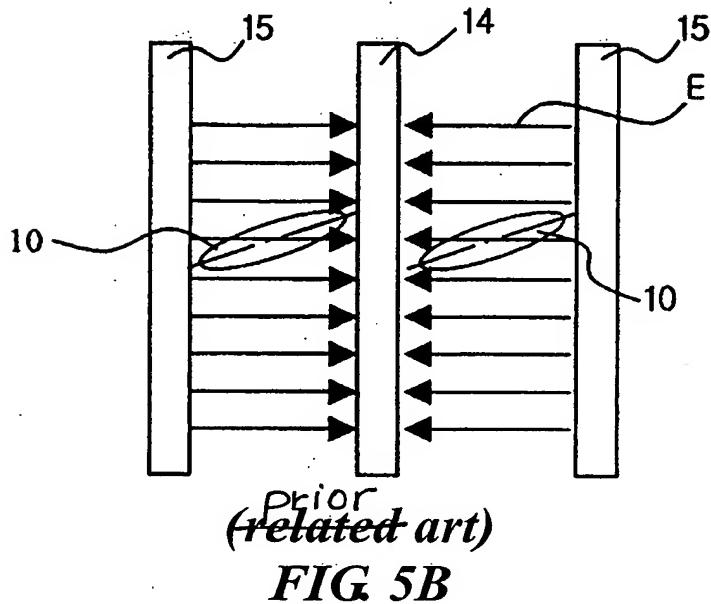
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FIG 4B



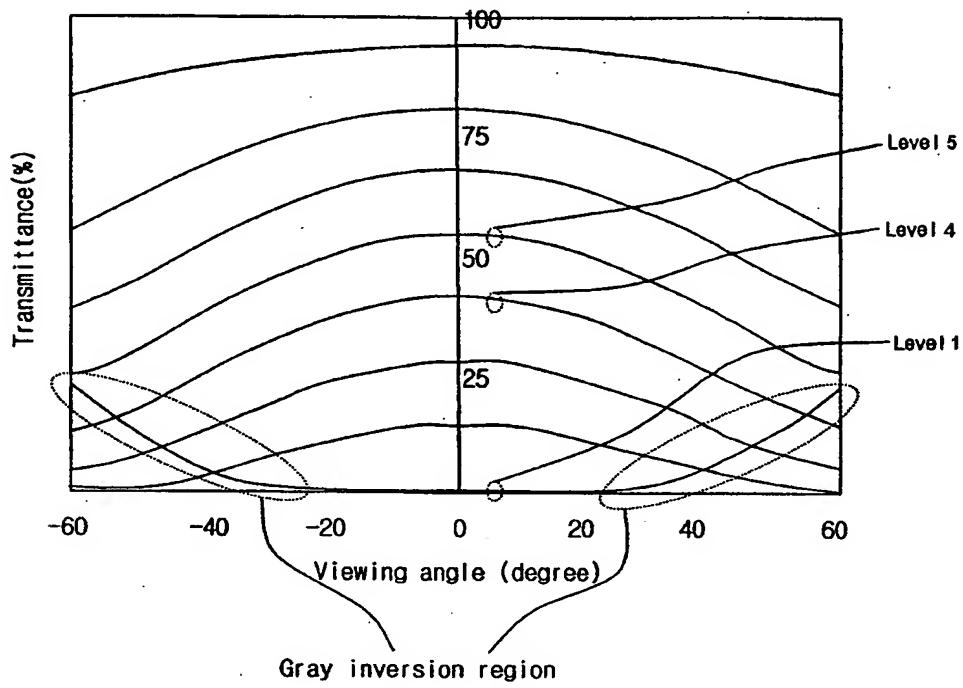
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(related art)*

FIG 5A



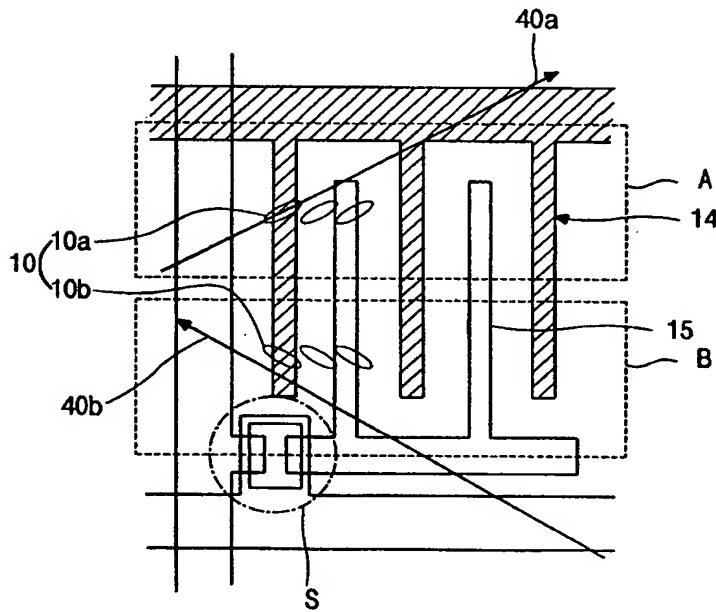
*Prior
(related art)*

FIG 6



(prior art)

FIG. 7



(related art)

FIG. 8